REMARKS

After entry of this amendment, claims 1-12, 14-19, 21, 22, and 24-37 are pending in the application. Claims 13, 20 and 23 have been cancelled, without prejudice as to Applicants' right to pursue protection of the subject matter of those claims in a related application. Claims 1, 4, 5, 7, 8, 10-12, 14, 15, 17-19, 21, 22, 24, and 35-37 have been amended. Support for the amending language is found throughout the specification, specifically on page 12, lines 1 through 11, and in Example 3, on page 20, line 18 through page 26, line 24. No new matter is added by these amendments.

The Examiner has issued a Restriction Requirement, alleging this application contains five inventions covered by the following claim groups:

I. Claims 1-16, drawn to a method for microdissecting tissue, classified in class 435, subclass 40.5.

II. Claims 17-22, drawn to a method of performing tissue microdissection of a tissue specimen, classified in class 435, subclass 7.1.

III. Claim 23, drawn to an apparatus for rapid immunofluorescence laser capture microdissection, classified in class 422, subclass 82.05.

IV. Claims 24-34, drawn to a method for fluorescently staining a tissue section for microdissection, classified in class 435, subclass 40.52.

V. Claims 35-37, drawn to a method for immunofluorescently labeling tissue that preserves biological molecules, classified in class 436, subclass 501.

Applicants submit that the subject matter of Group I, Group II, Group IV, and Group V are not unrelated inventions, but are a single invention or closely related inventions because they each utilize the same method for fluorescently labeling tissue. Amendments are filed herewith to more clearly illustrate the interrelatedness of the subject matter claimed in the claims of these Groups. In particular, amended claims 1, 17 and 24 as submitted herewith now refer to the method of claim 35 for fluorescently labeling tissue that preserves biological molecules.

As stated above, Applicants provisionally elect the invention of Examiner's Group V, drawn to a method for immunofluorescently labeling tissue that preserves biological molecules,

with traverse, in that the claims of Groups I, II and IV are in actuality drawn to or based on a linked invention. Applicants submit that it would not be unduly burdensome for the Examiner also to search for prior art relating to the inventions of Group I, Group II and Group IV, as the claims of Group I, Group II and Group IV now depend from a claim of Group V, and therefore contain all the limitations of the invention of Group V.

Conclusions

It is respectfully submitted that the present application is in condition for substantive examination. If any issues remain to be addressed prior to examination, the Examiner is invited to telephone the undersigned at the telephone number listed below.

Respectfully submitted,

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Marked-up Version of Amended Claims
Pursuant to 37 C.F.R. §§ 1.121(b)-(c)

1. (Amended) A method for microdissecting tissue, comprising:

labeling a sample of the tissue according to the method of claim 35;~~by exposing the tissue to a sufficient concentration of a fluorescent specific binding agent for a sufficiently short period of time to reduce a binding time of the agent to the tissue to reduce loss of a biological molecule in the tissue; and~~

identifying a component of interest in the sample to which the fluorescent specific binding agent binds by detecting fluorescence of the component of interest in the tissue; and

microdissecting components of interest from the tissue.

4. (Amended) The method of claim 1, wherein the fluorescent specific binding agent comprises an aqueous solution, and the biological molecule is RNA, DNA or a protein, which is lost in the presence of water.

5. (Amended) The method of claim 4, wherein the biological molecule is RNA.

7. (Amended) The method of claim 1, wherein the sufficient concentration of fluorescent specific binding agent is sufficient to avoid loss of more than about 5% of the biological molecule.

8. (Amended) The method of claim 7, wherein the sufficient concentration of fluorescent specific binding agent is sufficient to avoid loss of more than about 10% of the biological molecule.

10. (Amended) The method of claim 1, wherein the sufficient concentration of fluorescent specific binding agent is at least 0.02 mg/mL

11. (Amended) The method of claim 10 wherein the sufficient concentration of fluorescent specific binding agent is at least 0.1 mg/mL.

12. (Amended) The method of claim 9, further comprising pre-mixing a primary antibody and a secondary antibody, at least one of which is fluorescent, prior to exposing the tissue to the fluorescent specific binding agent to reduce a time of exposure of the tissue to the fluorescent specific binding agent.

14. (Amended) The method of claim 2~~1~~3, wherein the fluorescent specific binding agent is present in a sufficient concentration that, when the tissue is exposed to the fluorescent specific binding agent for less than about three~~3~~ minutes, the intensified image signal is detectable.

15. (Amended) The method of claim 14, wherein the fluorescent specific binding agent is present in a sufficient concentration that, when the tissue is exposed to the fluorescent specific binding agent for not more than about one~~1~~ minute, the intensified image signal is detectable.

17. (Amended) A method of performing tissue microdissection of a tissue specimen, comprising:

exposing the tissue specimen to a~~t least one~~ fluorescent~~ly labeled antibody which~~ specific binding agent according to the method of claim 35, wherein the fluorescent specific binding agent is a fluorescently labeled antibody, and wherein the fluorescently labeled antibody specifically binds to a component of interest in the tissue;~~, wherein the tissue is exposed to a sufficient concentration of the antibody, in an aqueous solution, for a sufficient period of time to label the component of interest without substantially degrading RNA in the tissue;~~

washing unbound antibody from the tissue;

intensifying an image of the tissue specimen which has been exposed to the fluorescently labeled antibody, to obtain an intensified fluorescent signal from the tissue;

applying a transfer member to the tissue;

directing a target laser beam to the component of interest in the tissue, to mark the component that is to be dissected from the tissue specimen, while viewing the target laser beam through an infrared filter that selectively filters infrared radiation but not the fluorescent signal, to minimize heat distortion of the intensified image, while still viewing the intensified signal; and

applying radiant laser energy to the component of interest to transfer the component to the transfer member.

18. (Amended) The method of claim 17, wherein exposing the tissue to a sufficient concentration of the ~~at least one~~ fluorescently labeled antibody comprises exposing the tissue to a concentration of at least 0.04 mg/mL of the fluorescently labeled antibody.

19. (Amended) The method of claim 18, wherein exposing the tissue to a sufficient concentration of the ~~at least one~~ fluorescently labeled antibody comprises exposing the tissue to a concentration of at least 0.10 mg/mL of the ~~at least one~~ fluorescently labeled antibody

21. (Amended) The method of claim 17~~20~~, wherein ~~ex~~ exposing the tissue to the ~~at least one~~ fluorescent~~ly labeled antibody~~ specific binding agent comprises exposing the tissue to the ~~at least one~~ fluorescent~~ly labeled antibody~~ specific binding agent for less than about three~~3~~ minutes.

22. (Amended) The method of claim 21, wherein ~~ex~~ exposing the tissue to the fluorescent~~ly labeled antibody~~ specific binding agent comprises exposing the tissue to the ~~antibody~~fluorescent specific binding agent for no more than about one~~1~~ minute.

24. (Amended) A method for fluorescently staining a tissue section for microdissection, comprising:

fixing a tissue section with a non-crosslinking fixative;

rinsing the tissue section twice with an aqueous buffered solution for about 5 seconds per rinse;

incubating the fixed tissue section with a~~n aqueous~~ fluorescent specific binding agent according to the method of claim 35, wherein the fluorescent specific binding agent is in an aqueous solution;~~solution of sufficient concentration to selectively label cells within the tissue section in about 1 minute.~~

rinsing the tissue section twice with an aqueous buffered solution for about 5 seconds per rinse;

dehydrating the tissue section; and

drying the tissue section.

~~34~~35. (Amended) A method for ~~immuno~~fluorescently labeling tissue that preserves a biological molecule~~s~~, comprising:

contacting the tissue with a~~aqueous~~ fluorescent specific binding agent~~antibody solutions~~ of sufficient concentration to selectively label target~~immunophenotypically similar~~ cells against which the fluorescent specific binding agent is~~antibodies are~~ directed in less than about five minutes.

~~35~~36. (Amended) The method of claim ~~34~~35, wherein the fluorescent specific binding agent is~~aqueous fluorescent antibody solutions are~~ of sufficient concentration to selectively label target~~immunophenotypically similar~~ cells against which the fluorescent specific binding agent is~~antibodies are~~ directed in less than about three minutes.

~~36~~37. (Amended) The method of claim ~~35~~36, wherein the fluorescent specific binding agent is~~aqueous fluorescent antibody solutions are~~ of sufficient concentration to selectively label target~~immunophenotypically similar~~ cells against which the fluorescent specific binding agent is~~antibodies are~~ directed in not more than about one minute~~less than about three minutes~~.